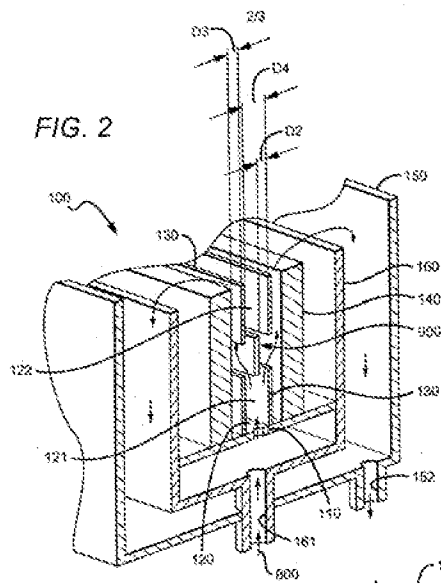


### **REMARKS**

This Amendment and Response is submitted in reply to the Final Office Action dated June 16, 2009 and further to the Advisory Action dated August 24, 2009. With this Amendment, claims 1, 3, 8, 10, 11 and 13 have been amended and claims 2, 4-7, 12 and 14-18 are cancelled. In light of the following remarks the pending claims should be allowed. Reconsideration and notice to that effect are respectfully requested.

### **Claim Amendments**

Claim 1 has been amended to further define a continuous plating system including first and second vertically disposed anodes that define a plating area, an elongated upper channel defined by first and second vertically disposed upper shields, an elongated lower channel defined by first and second vertically disposed lower shields, and a part clamp configured to move parts to be plated through the plating area such that the parts extend into both the upper and lower channels. Support can be found at least at paragraphs 19-22 and FIGS. 2, 2A, 3A, 3B and 4. As stated in the specification, "In essence, the shields 130 of FIG. 2 form narrow upper and lower plating channels (121 and 122) through which the parts being plated move with each part 900 having one edge 902 positioned within the upper plating channel 122 and an opposite edge 901 positioned within the lower channel 121." (Page 2 of the published application, para. 21). FIG. 2 is reproduced below for reference.



### **Rejections under 35 U.S.C. §103**

In the Office Action, claims 1-3, 8-13 and 19 were rejected under 35 U.S.C §103(a) as being unpatentable over JP 08-296086 (“Akino”) in view of US Patent 4,879,007 (“Wong”) and US Patent 5,516,412 (“Andricacos”). The Examiner concluded that Akino discloses each claim limitation except that the part to be plated does not overlap with the upper and lower channels, or a horizontal sparger with multiple outlets. The Examiner further concluded it would have been obvious to modify Akino based on Wong to reduce the gap between the shields and on Andricacos to provide a sparger with multiple outlets. Applicants respectfully submit that there would have been no reason to combine the references as proposed in the Office Action, and even if combined, would not include each feature of the present invention.

Akino discloses an electroplating system including two upper shields forming an upper channel and two lower shields forming a lower channel. The upper and lower channels are separated by a gap. In order to provide a plate of uniform thickness, and specifically to prevent reduction in plating at the upper end of the metal strip 30 the lower ends of upper shields 40 are tapered into a wedge. (Abstract). By forming this wedge, fluidization is improved at the upper end of the shield and excessive current shielding is avoided. (Par. [0014]). Accordingly, the invention disclosed in Akino improves fluid flow, and thus plating, at an upper end of the metal strip by reducing the amount of shielding at the upper end of the part to be plated.

Even assuming that Wong discloses shields that overlap the part to plated, the teachings of Akino are in direct contrast to the Examiner’s basis for making such a modification. Notably, Akino discloses an approach to improve fluid turbulence at an upper end of the workpiece by tapering the lower edges of the upper shields to *reduce* shielding at the upper end of the work piece. The result of this tapering is to provide more uniform plating at an upper end of the part.

However, a person of skill in the art would appreciate that closing the gap between the upper and lower shields as proposed in the rejection would have the opposite effect of *increasing* shielding of the part. This would tend to reduce the plating thickness at the upper end of the part, which is in direct contrast to the express teachings of Akino. Accordingly, a person of skill in the art would have had no reason to utilize Wong or any other reference to close the gap between the upper and lower shields disclosed in Akino.

Moreover, the combination of Akino and Wong does not disclose each limitation of claim 1. The Examiner cites to the notches in the plurality of plates extending below the side walls of

the shielding device to assert that it would have been obvious to one of skill in the art to have further used the shield such that it overlaps the edge of the metal strip in the apparatus of Akino et al. because it would deposit a uniform thickness coating on the substrate. (Office Action dated 6/16/09, page 3). However, Wong does not even include upper shielding plates. At most, Wong teaches an elongated trough having sidewalls 6 and 8 that function as lower shields. (Col. 3, lines 21-23). Consequently, Wong does not disclose upper and lower shield plates that overlap a part to be plated and the resulting combination of Wong and Akino would still not include upper shields that overlap the part to be plated.

For at least the above reasons, one of skill in the art would not have reason to combine the plating systems of Akino and Wong, and regardless, the resulting combination would not disclose each and every feature of the claimed invention.

Claim 1 of the present invention also recites a horizontal sparger having a series of inlets. The Examiner acknowledges that Akino teaches a single inlet and does not explicitly teach whether there is a series of them. (Office Action dated 6/16/09, page 3). The Examiner attempts to meet this limitation by relying on Andricacos.

Andricacos discloses a plurality of inlet holes 58 disposed vertically in the inner cell floor generally equidistant from the cathode and the anode. However, a person of skill in the art would have had no reason to combine the plating systems of Akino and Andricacos at least because the system shown in Andricacos does not include shields, and consequently, does not require positioning of the fluid nozzles below the plating area. Rather, the nozzles are spaced between the anode and cathode.

Akino et al., Wong and Andriacacos et al. do not individually or in combination disclose each feature of claim 1. Therefore, the rejection of claim 1 should be withdrawn and claim 1 allowed. In that claim 1 is in condition for allowance, the rejections of claims 3, 8-11 and 19, which depend therefrom, should be withdrawn and claims 3, 8-11 and 19 allowed.

In the Office Action, claims 4-7 were rejected as being unpatentable over Akino et al. in view of Wong, Andricacos et al, and further in view of US Patent 2,859,166 ("Grigger"). Claims 4-7 have been cancelled.

**Conclusion**

In summary, pending claims 1, 3, 8-11, 13 and 19 are believed to be patentable for at least the reasons described above. Reconsideration and notice to that effect are respectfully requested. If there are any remaining questions, the Examiner is requested to contact the undersigned at the number listed below.

Respectfully submitted,

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